

NECHMEYANOV, A. V.

"Utilization of Radioactive Material in Technice," a chapter from the book Problems in the Utilization of Atomic Energy, the second revised edition of a collection of articles, published in 1956, Moscow, USSR

*NE S MEYANOV, A.H.*

YUR'YEV, Yu.K., prof.; NESMEYANOV, A.H., akademik, otv.red.

[Laboratory work in organic chemistry; program for the Chemistry Faculty] Programma praktikuma po organicheskoi khimii (dlia khimicheskogo fakul'teta). 1956. 14 p. (MIRA 11:3)

1. Moscow. Universitet.  
(Chemistry, Organic--Study and teaching)

NESMEYANOV, A.N., akademik, glavnyy redaktor; TOPCHIEV, A.V., akademik, zamestitel' glavnogo redaktora; ISAKOVA, O.V., otvetstvennyy redaktor; LIKHTEISHTEYN, Ye.S., otvetstvennyy redaktor; SHUMKOV, V.I., otvetstvennyy redaktor; LOSKUTOVA, I.P., redaktor izdatel'stva; NOVIKOVA, S.G., tekhnicheskii redaktor

Boris Aleksandrovich Arbuzov. Moskva, 1956. 43 p. (Materialy k biobibliografii uchenykh SSSR. Seriya khimicheskikh nauk, no.22)  
(MLRA 9:9)

1. Akademiya nauk SSSR.

(Bibliography--Arbuzov, Boris Aleksandrovich, 1903- )

PANOV, D.Yu.; NESMEYANOV, A.E., akademik, redaktor; DREYER, O.K., redaktor;  
ZHELEKOVA, Ye.V., tekhnicheskii redaktor

[Mechanical translation] Avtomaticheskii perevod. Moskva, Izd-vo Akademii nauk SSSR, 1956. 44 p. (MIRA 9:3)  
(Translating and interpreting)

VREDEN-KOBEYSKAYA, T.O.; NISMEYANOV, A.N., akademik, glavnyy redaktor;  
TOPCHIN, A.V., akademik, zamestitel' glavnogo redaktora; ISAKOVA,  
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redaktor; SHUNKOV, V.I., otvetstvennyy redaktor; GUREV, E.P.,  
redaktor izdatel'stva; POLYAKOVA, T.V., tekhnicheskiy redaktor

[Vladimir Aleksandrovich Fok; bibliography] Vladimir Aleksandrovich  
Fok; bibliografiya. Moskva, Izd-vo Akademii nauk SSSR, 1956. 93 p.  
(Materialy k biobibliografii uchennykh SSSR. Seriya fiziki, no.7)  
(Bibliography--Fok, Vladimir Aleksandrovich, 1898- )

KOZAK, E.A.; MUSATOV, I.G.; PEROVICH, I.N.; SHAFRANOVSKIY, K.I.; STRELKOV, A.A., redaktor; ISAKOVA, O.V., otvetstvennyy redaktor; LIKHTENSHTEYN, Ye.S., otvetstvennyy redaktor; SHUNKOV, V.I., otvetstvennyy redaktor; MESMEYANOV, A.N., akademik, glavnyy redaktor; TOPCHIEV, A.V., akademik, zamestitel' glavnogo redaktora; RUDENSKAYA, L.V., redaktor izdatel'stva; NOVIKOVA, S.I., tekhnicheskiy redaktor

Evgenii Nikanorovich Pavlovskii. Izd. 2-oe, ispr. i dop. Pod red. A.A.Strelkova. Bibl. sost. E.A.Kozak i dr. Moskva, 1956. 239 p. (Materialy k biobibliografii uchenykh SSSR. Seriya biologicheskikh nauk. Parazitologiya, no.1) (MLR 9:12)

1. Akademiya nauk SSSR.

(BIBLIOGRAPHY--PAVLOVSKII, EVGENII NIKANOROVICH, 1884- )

*nesmeyanov, A. N.*

Translation from: Referativnyy Zhurnal, Elektrotehnika, 1957,  
Nr 3, p. 170 (USSR) 112-3-6243

AUTHOR: Nesmeyanov, A. N.

TITLE: Problems of Academic Institutions in the Development of  
the Theory of Automation of Technological Processes  
(Zadachi akademicheskikh institutov v razvitii teorii  
avtomatizatsii tekhnologicheskikh protsessov)

PERIODICAL: In Sbornik: Avtomatizatsiya tekhnol. protsessov v  
mashinostr. Obrabotka metallov rezaniyem i obshchiye  
vopr. avtomatizatsii, Moscow, 1956, pp. 9-11

ABSTRACT: Bibliographic entry.

Card 1/1

60. Research on Telomerization Described

"Investigation of the Reaction of Telomerization of Ethylene With Carbon Tetrachloride and the Chemical Transformations of alpha, alpha, alpha, omega-Tetrachloroalkanes" by A. N. Nesmeyanov, R. Kh. Freydlina, L. I. Zakharkin, Ye. I. Vasil'yeva, R. G. Petrova, Sh. A. Karapetyan, G. B. Ovakimyan, A. A. Beer, and M. A. Besprozvanny, Khimicheskaya Pererabotka Neftyanykh Uglevodorodov (Chemical Conversion of Petroleum Hydrocarbons), Academy of Sciences USSR, Moscow, 1956, pp 303-323

It is pointed out that higher alpha, omega-bifunctional compounds such as glycols, diamines, dicarboxylic acids, aminocarboxylic acids, and hydroxycarboxylic acids, are of great importance as starting materials for the manufacture of a number of synthetic industrial products such as plastics, synthetic fibers, plasticizers, lubricating oils, and that for this reason the development of industrial methods for the synthesis of starting materials of this type from natural gas and industrial gases is an important undertaking. In view of the fact that telomerization reactions offer new possibilities for the synthesis of such materials, reactions of this type are now being investigated.

The results of experimental work on the following subjects are described: telomerization of ethylene with carbon tetrachloride in an autoclave (batch conversion); synthesis of higher alpha, alpha, alpha, omega-tetrachloroalkanes; initiation of the telomerization reaction with short-wave radiation (X rays and gamma-rays emitted by  $\text{Co}^{60}$ ), and chemical conversions of alpha, alpha, alpha, omega-tetrachloroalkanes including synthesis of omega-aminocarboxylic acids (omega-aminocanthic

acid, omega-aminopelargonic acid, and 11-aminoundecanoic acid), synthesis of beta-alanine from tetrachloropropane, synthesis of thiodicarboxylic acids of the constitution  $S[(CH_2 - CH_2)_n COOH]_2$ , and synthesis of normal dicarboxylic acids (including higher dicarboxylic acids such as 1,10-decanedicarboxylic acid and 1,14-tetradecanedicarboxylic acid).

With reference to the synthesis of thiodicarboxylic acids, the statement is made that these acids and their sulfones have been investigated thoroughly during recent years from the standpoint of their application in polycondensation processes. In connection with the telomerization of ethylene with carbon tetrachloride, a method of conducting this reaction continuously with recirculation of the unused ethylene is described; the batch method of reacting the mixture in an autoclave is stated to be dangerous because of the possibility of explosions. The following conclusions are given at the end of the paper:

"The chemical transformations of alpha, alpha, alpha, omega-tetrachloroalkanes that are described in the paper are merely examples illustrating the profuse possibilities which are opened up by this type of synthesis. A review of other reactions of tetrachloroalkanes and trichloroalkanes has been published by A. N. Nesmeyanov, R. Kh. Freydlina, and L. I. Zakharkin in Spekhi Khimii, Vol 25, No 6, June 1956, page 655. One must emphasize that a number of substances described in the present paper are of exceptional interest from the practical standpoint. Specifically, omega-aminocarboxylic acids are excellent starting materials for the synthesis of polyamide fibers.

"The fiber enant, which is derived from omega-aminoenanthic acid, is not inferior in its characteristics to other polyamide fibers such as capron and nylon. As far as a number of properties is concerned, e.g., thermal stability, stability to light, and elasticity, enant surpasses other polyamide fibers. The telomerization of ethylene with carbon tetrachloride, the conversion of 1,1,1,7-tetrachloroheptane into omega-aminoenanthic acid, and the conversion of 1,1,1,5-tetrachloropentane into delta, delta prime-thiodivaleric acid have been carried out at experimental [semiplant] installations." (U)

*NESEMAYANOV, A. N.*

USSR/ Chemistry - Analytical chemistry

Card 1/1 Pub. 40 - 5/25

Authors : Anisimov, K. N., and Nesmeyanov, A. N.

Title : Study of unsaturated phosphinic acid derivatives. Part 17. Derivatives of beta-phenylvinylphosphinic acid

*NESMEYANOV, A. N.*

USSR/ Chemistry - Analytical chemistry

Card 1/1 Pub. 40 - 6/25

Authors : Anisimov, K. N.; Kolobova, N. Ye.; and Nesmeyanov, A. N.

Title : Study of unsaturated phosphinic acid derivatives. Part 18. Alkylthiovinyl-  
phosphinic acid chlorides and their derivatives

NESMEYANOV, A.N.; BORISOV, A.Ye.; VOL'KENAU, N.A.

Exchange reactions of stereoisomeric mercury stilbene derivatives.  
Izv.AN SSSR Otd.khim.nauk no.2:162-171 F '56. (MLRA 9:7)

1. Institut elementeorganicheskikh soedineniy Akademii nauk SSSR.  
(Stilbene) (Mercury organic compounds)

KOCHETKOV, N.K.; DOMBROVSKIY, Yanush; BAZHENOVA, A.V.; SEVERIN, Ye.S.; NESMEYANOV,  
A.N.

$\beta$ -aminevinyl ketenes. Part 4. Synthesis of ketenes of the pyridine  
series. Izv.AN SSSR Otd.khim.nauk no.2:172-176 F '56. (MLRA 9:7)

1.Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.  
(Ketenos) (Pyridine)

*NESMEYANOV, A. N.*

USSR/ Organic Chemistry - Synthetic organic chemistry

E-2

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11803

Author : Nesmeyanov A.N., Kritskaya I.I.

Inst : Department of Chemical Sciences, Academy of Sciences USSR

Title : On Condensation of Ferrocene with Aldehydes

Orig Pub : Izv. AN SSSR, Otd. khim. n., 1956, No 2, 253-254

Abstract : By interaction of 0.04 mole ferrocene (I) and 0.04 mole HCHO (in the form of a 40% solution), in the presence of 50 ml 96% H<sub>2</sub>SO<sub>4</sub> (-15°, 15 minutes; 15-20°, 30 minutes; 65-75°, 75 minutes), is obtained a solution of the cation of bis-ferrocenylene-methane, which is reduced to bis-ferrocenylene-methane (II) CH<sub>2</sub>(C<sub>5</sub>H<sub>4</sub>FeC<sub>5</sub>H<sub>4</sub>)<sub>2</sub>CH<sub>2</sub>, by addition of 30-40 ml concentrated HCl and SnCl<sub>2</sub>, yield of II, 65-75%, MP 191° (from dioxane). Under the same conditions, from 0.08 mole I and 0.08 mole C<sub>6</sub>H<sub>5</sub>CHO was obtained bis-ferrocenylene-phenylmethane (III) C<sub>6</sub>H<sub>5</sub>CH(C<sub>5</sub>H<sub>4</sub>FeC<sub>5</sub>H<sub>4</sub>)<sub>2</sub>CHC<sub>6</sub>H<sub>5</sub>, yield 30-37.5%, MP 218-220° (from dioxane), and the product of incomplete

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USSR/ Organic Chemistry - Synthetic organic chemistry

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Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11803

condensation  $C_5H_5FeC_5H_4CH(C_6H_5)C_5H_4FeC_5H_4CH(OH)C_6H_5$ , yield 30-37.5%,  
MP 268-270° (all melting points were determined in sealed capillaries).

III was removed from the mixture with boiling acetone.

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NESMEYANOV, A.N.; LAVRUSHIN, V.F.; SHMAYEVA, T.M.; PEREVALOVA, E.G.

Cleavage of the C -- C bond in compounds containing triphenylmethyl grouping. Izv.AN SSSR.Otd.khim.nauk no.3:309-312 Mr '56.(MLRA 9:8)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova  
i Khar'kovskiy gosudarstvennyy universitet imeni A.M. Gor'kogo.  
(Carbon compounds)

NESMEYANOV, A.M.; NOGINA, O.V.; FREYDLINA, R.Kh.

Preparation of hexalkoxydititanoxanes  $(\text{RO})_3\text{Ti} \text{---} \text{O} \text{---} \text{Ti}(\text{OR})_3$ .  
Izv. AN SSSR. Otd. khim. nauk no. 3: 373-375 Mr '56. (MLBA 9:8)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.  
(Titanium organic compounds)

NESEMEYANOV, A. N.

Category : USSR/General Problems - General

AA-1

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 5421

Author : Nesmeyanov, A. N.

Title : On the Tasks of the Academy of Sciences of the USSR in the  
Light of the Resolutions of the 20th Congress of the Communist  
Party of the Soviet Union.

Orig Pub : Vestn. AN SSSR, 1956, No 6, 3-24

Abstract : No abstract

Card : 1/1

*N. I. Mesmeyanov, A. N.*

USSR/Organic Chemistry, Synthetic Organic Chemistry.

E-2

Abs Jour: Ref Zhur-Khimiya No 6, 1957, 19073

Author : Kochetkov N.K., *N. I. Mesmeyanov* A.N., Ivanova M.G.,

Inst :

Title :  $\alpha$ -Aminovinylketones. V. Alkylation of  $\beta$ -dialkylaminovinylketones. New Synthesis of Oxymethyleneketones.

Orig Pub: Izv. AN SSSR, Otd. Khim. N., 1956, No 6, 676-680.

Abstract: A new method is offered for the synthesis of oxymethyleneketones by the hydrolysis of the products of interaction R (R-alkyl) and alkyl- $\beta$ -dialkylaminovinylketones. The reaction proceeds smoothly with  $\text{CH}_3$ , but not with  $\text{CH}_3\text{Br}$ ; the higher the radicals the yields become lower. With  $(\text{CH}_3)_2\text{SO}_4$  the yield is lowered to 4-5%. The method of the synthesis of  $\text{RCOCH}=\text{CHN}(\text{CH}_3)_2$  (where R-alkyl) from  $\text{RCOCH}=\text{CHCl}$  is applied in the synthesis of aryl- $\beta$ -dimethylaminovinylketones. Obtained were (enumerated are the

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USSR/Organic Chemistry, Synthetic Organic Chemistry.

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Abs Jour: Ref Zhur-Khimiya No 6, 1957, 19073.

ketones, yield in percent, boiling p. in °C/mm  $n_D^{20}$ ,  $d_4^{20}$ ):  
 $C_2H_5COCH=CHN(CH_3)_2$ , 56.4, 95-96/4 1.5400, 0.9533;  
 $C_2H_5COCH=CHN(CH_3)_2$ , yield 88%, melting p. 90-91°  
 (from petr. ether). A solution of 11 g.  $\eta$ -Cl  $C_6H_4COCH=CHCl$  in 15 cc  $C_6H_6$  on cooling and stirring, is added  
 to 20 cc of a 30% aqueous solution of  $(CH_3)_2NH$ , stirred  
 for an hour, yielding  $\eta$ -Cl  $C_6H_4COCH=CHN(CH_3)_2$  82.4%,  
 m. p. 85° (from ligroin). In an autoclave (110-120°) are  
 heated (2 hours) 8 g.  $C_3H_7COCH=CHN(CH_3)_2$  and 16 g.  $CH_3J$ ,  
 a double volume of water is added, boiled for two hours,  
 extracted with ether, with a yield of 2-oxymethylene-  
 hexanone-3 51%, b. p. 63-65°/10 mm,  $n_D^{20}$  1.4599,  
 $d_4^{20}$  1.0002, melting point of the copper salt is 145° (from  
 abs. alcohol). In an analogical manner obtained are  
 (name, yield in percent, boiling p. in °C/mm,  $n_D^{20}$ ,  $d_4^{20}$ ):  
 2-oxymethylene-5-methylhexanone-3 (I), 52, 66-68/9, 1.4620,

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semicarbazone, m.p. 129°. For previous report see  
 RZhKhim, 1956, 78155.

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NESMEYANOV, A.N.; PEREVALOVA, E.G.; GOLOVNYA, R.V.; NIKITINA, T.V.; SIMUKOVA, N.A.

Disruption of the ferrocene nucleus by hydrogenation and treatment with  
halides. Izv.AN SSSR Otd.khim.nauk no.6:739-741 Je '56. (MIRA 9:9)

1.Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.  
(Iron dicyclopentadienyl)

*NEB MEYER, R.N.*

USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26699.

Author : Kochetkov, N.K., Khorlin, A.Ya.,  
Gottikh, B.P.; Nesmeyanov, A.N.

Inst : Academy of Sciences of USSR.

Title : Synthesis of Alkenyl- $\beta$ -chlorovinylketones.

Orig Pub : Izv. AN SSSR, Otd. khim. n., 1956, No. 9,  
1053 - 1058.

Abstract : The following methods of synthesis of alkenyl- $\beta$ -chlorovinylketones (ACVK) were developed: the method of direct condensation of acetylene (I) with chloroanhydrides (CA) of  $\alpha$ ,  $\beta$ -unsaturated acids in presence of  $AlCl_3$ , and the method of condensation of I with CA of  $\alpha$ - or  $\beta$ -chlororeplaced acids in presence of  $AlCl_3$  with following dehydrochlorination of the produced  $\alpha$ -

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USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2  
"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136620

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26699.

(or  $\beta$ )-chloroalkyl- $\beta$ -chlorovinylketone. Experiments with CA of  $\alpha$ - or  $\beta$ -bromoreplaced acids did not succeed. It is shown that ACVK react with  $\beta$ -naphthol (II) in presence of  $FeCl_3$  producing ferrochlorides of 2-alkenyl-naphthopyrilium. 88 g of CA of butyric acid, 119 g of  $SO_2Cl_2$  and 1 g of  $I_2$  are heated (45 to 50 hours at 90 to 110°), distilled, the fraction of the boiling point 115 to 150° is collected, shaken with mercury, distilled using a column still (10 to 15 theoretical plates); the yield of CA of  $\alpha$ -butyric acid (III) is 60.3%, boiling point 129 to 132°/

756 mm,  $n_D^{20} = 1.4475$ ,  $d_4^{17} = 1.2360$ . CA of

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Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26699.

mixture of propenyl- $\beta$ -chlorovinylketone (IV) and  $\alpha$ -chloropropyl- $\beta$ -chlorovinylketone, boiling point 81 to 86°/15 mm, was received analogously of 81 g of III and 85 g of  $AlCl_3$  in 200 mlit of  $CCl_4$  by conducting I (7 to 8 hours at 15 to 20°); after the treatment with 51 g of VIII, the yield of XI was 47.3%, boiling point 70 to 72°/10 mm, melting point 38 to 39°. A fraction of the boiling point of 78 to 92°/10 mm was received in the amount of 30 g from 60 g of IV and 60 g of  $AlCl_3$  in 150 mlit of dichloroethane (X) by conducting I (7 hours at 15 to 20°); it was treated with 32.5 g of VIII, yield of isobutenyl- $\beta$ -chlorovinylketone (XI) was 32.7%, boiling point 76 to 79°/11 mm. 13.3 g of  $AlCl_3$  is added to

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**NESMEYANOV, A.M.; RYBINSKAYA, M.I.; KOCHETKOV, N.K.**

Condensation of  $\beta$ -chlorovinyl ketones with benzene and its  
homologs. Izv.AN SSSR. Otd.khim.nauk no.10:1197-1201 0 '56.  
(MLRA 9:12)

1. Institut elementoorganicheskikh soedineniy Akademii nauk  
SSSR.

(Ketones) (Benzene)

*NEZMEYANOV, A.N.*  
FREYDLINA, R.Kh.; KOST, V.N.; NEZMEYANOV, A.N.

Chlorination of unsaturated polychloro derivatives in an acid medium. Izv.AN SSSR. Otd.khim.nauk no.10:1202-1207 O '56.  
(MLRA 9:12)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.

(Compounds, Unsaturated)  
(Chlorination)

NESMEYANOV A.A.

TOPCHYEVA, K.V.; PESHKOVA, V.M.; SHAKHOVA, Z.F.; ALIMARIN, I.P.; NOVOSELOVA,  
A.V.; SPITSYN, V.I.; LUTSENKO, I.F.; GERASIMOV, Ya.I.; NESMEYANOV,  
A.N.; TERENT'YEV, A.P.; POTAPOV, V.M.; GIBALO, I.M.

N.S. Przheval'skii; obituary. Vest. Mosk. un. Ser. mat. mekh., astron.,  
fiz., khim. 11 no.2:205-207 '56. (MIRA 10:12)

(Przheval'skii, Evgenii Stepanovich, 1879-1956)

**Authors :** Nesmeyanov, A. N., Academician, President of the Acad. of Sc., USSR

**Title :** Science and Industry

**Periodical :** Vest. AN SSSR 26/2, 3-19, Feb 1956

**Abstract :** Editorial written in the journal, "Communist," No. 2, 1956 emphasizing the necessity for close cooperation between science and industry in the USSR. The editorial was written as a resolution of the 20-th congress of the Communist Party, USSR which appears to be a powerful factor in developing the national economy and culture of the USSR.

**Institution :** .....

**Submitted :** .....

*Nesmeyanov, A. N.*

USSR/Organic Chemistry - Theoretical and General Questions  
on Organic Chemistry

E-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

Author : Nesmeyanov, A.N., Freydlina, R.Kh., Zakharkin, L.I.,  
Belyavskiy, A.B.

Title : Action of Nucleophilic Substances on Compounds of the  
Structure  $CCl - CH = CRR'$ .

Orig Pub : Zh. obshchey khimii, 1956, 26, No 4, 1070-1082

Abstract : By dehydrobromination of 1,1,1-trichloro-3-bromobutane (I), 1,1,1-trichloro-3-bromo-3-phenylpropane (II), 1,1,1-trichloro-3-bromo-3-methylbutane (III) and 1,1,1-trichloro-3-bromo-4,4-dimethylbutane (IV) (synthesized by addition of  $CCl_3Br$  to the corresponding olefins) were prepared, respectively: 1,1,1-trichlorobutene-2 (V), 1,1,1-trichloro-3-phenylpropene-2 (VI), 1,1,1-trichloro-3-methylbutene-2 (VII) and 1,1,1-trichloro-4,4-dimethylpentene-2 (VIII). Structure of VI was confirmed by

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on Organic Chemistry

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Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

which is attributed to spatial hindrances. In an alcoholic medium  $(C_2H_5)_2NH$  reacts with V and VI to form mixtures of alkoxy- and amino- derivatives, while with VII and VIII only alkoxy-derivatives are formed. With  $(C_2H_5)_2NH$  alone, without alcohol, V and VI form amino-derivatives, while VII does not react even at  $110^\circ$ . On action of  $NH_3$  and piperidine (XL), in an alcoholic medium, VII forms a small amount of amino-derivatives. The same course of the reaction has been ascertained on interaction of V, VI and VII with  $Na_2S$  in alcoholic medium: V and VI form mixtures of O- and S-derivatives, while VII yields only O-derivatives. The authors draw the conclusion that the reactivity of the investigated compounds depends to a large extent upon the nature of the substituents at the center of action of the NP. With decrease of the electrophilic nature (EP) of the compound under

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on Organic Chemistry

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study ( $V > VI > VIII > VII$ ) the rate of alkylation at the O-atom increases and that at the N- or the S-atom decreases. From previous work, (see above-cited reference), it follows that EP of 1,1,1-trichloropropene is greater than that of V. An analogy is traced between the reactions under study and the alkylation of metal derivatives of tautomeric systems, taking place with transfer of the reaction center. In the former case, there is alkylated a mixture of two substances comprising different centers of EP attack, and in the latter case both these centers are bound into a  $\sigma$  system of  $\pi$ -conjugation (keto-enolic, lactim-lactamic). It is shown that V, VI and VII react with  $C_6H_6$  in the presence of  $AlCl_3$ , to form, respectively, 1,1-dichloro-3-phenylbutene-1 (XII), 1,1-dichloro-3,3-diphenylpropene-1 (XIII) and 1,1-dichloro-3-methyl-3-phenylbutene-1 (XIV). It was found that

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Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

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on interaction of III with alcoholic KOH there is formed, in addition to VII, 1,1-dichloro-3-methylbutene-1,3 (XV). Action of excess alkali in III or on 1,1,1,3-tetrachloro-3-methylbutane (XVI), in  $CH_3OH$  or  $C_2H_5OH$ , gives 1,1-dichloro-3-methoxy- (XVII) or 1,1-dichloro-3-ethoxy-3-methylbutene-1 (XVIII). On heating XVIII is converted to XV. VII also forms XV on boiling and in  $CH_3COOH$  at  $100^\circ$ . On action of HCl (gaseous) XV and XVII form X, which is readily reconverted to XV (alcoholic alkali). It is shown that on interaction of VII with alcoholic alkali,  $(C_2H_5)_2NH$  or XI, there is formed an admixture of XV. The assumption is made that XV can be formed by isomerization of VII to X and subsequent splitting off of HCl or as a result of direct action of

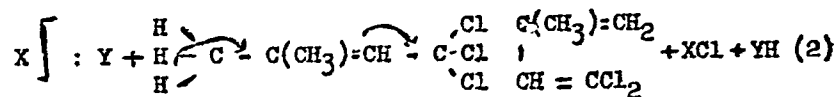
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on Organic Chemistry

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the NP-reagent on  $\sigma$ ,  $\pi$ ,  $\delta$ -conjugated system (see scheme 2). High yield of XV from X and its low yield from VII are indicative of the fact that VII reacts with NP-reagents in accordance with scheme (1) without any isomerization. Noted is the similarity in behavior of the  $Cl_3C$ -group of VI and of  $C_6H_5CCl_3$  (hydrolysis by 90%  $CH_3COOH$ , disproportionation with formation of  $ClCH_2COCl$  on heating with  $ClCH_2COOH$ ). There is proposed a new scheme (cf., Kharasch, J. Amer. Chem. Soc., 1947, 67, 1100, 1105), of alkaline hydrolysis of the products of addition of  $CCl_3$  to olefins:

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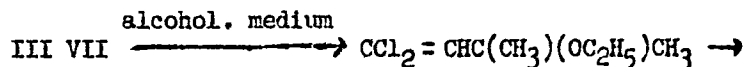
USSR/Organic Chemistry - Theoretical and General Questions  
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APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R001136620

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228



$HOOCCH_2C(CH_3)_2$ . From 44 g I in 50 ml absolute alcohol HBr is split off by means of 11.2 g KOH in 50 ml alcohol (0°, 6 hours) to get V, yield 51%, BP 57-57.5°/49 mm,  $n_D^{20}$  1.4810,  $d_4^{20}$  1.2972. 4.7 g V ozonized ( $CHCl_3$ , 6% ozone, 4 hours) to the chloral, yield 50%, identified as dinitrophenyl hydrazone. By interaction of 50 g  $Cl_2C=CH-CHO$  with equimolecular amount of  $CH_3MgI$  (2 hours) is obtained 1,1-dichloro-3-hydroxybutene-1 (XIX). yield 60%, BP 72°/10 mm,  $n_D^{20}$  1.4792,  $d_4^{20}$  1.3026. By action of  $Br_2$  on IX is formed dibromo-trichlor butane, BP 87°/1 mm,  $n_D^{20}$  1.5590,  $d_4^{20}$  2.0466. Ozonolysis of IX yields  $COCl_2$ , identified as diphenylurea, MP 232-233°. 205 g II and 275 g  $(C_2H_5)_3N$  boiled 8 hours to give VI, yield

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64%, BP 91-92°/1 mm,  $n_D^{20}$  1.5710,  $d_4^{20}$  1.3217. On dehydrobromination with alkali in  $C_2H_5OH$  VI reacts with alcohol. 153 g III in 50 ml alcohol treated with 45 g KOH in 180 g alcohol (0°) to get XV, yield 3.5 g, BP 30-31°/8 mm,  $n_D^{20}$  1.5027, and VII, yield 60.5%, BP 45-46°/8 mm,  $n_D^{20}$  1.4822,  $d_4^{20}$  1.2497. From 63 g XVI and 47 g KOH in 150 ml  $CF_3CH_3$  (15-20°, 1 day) are obtained XV, yield 5.1 g, and XVII, yield 71%, BP 51-52°/10 mm,  $n_D^{20}$  1.4628,  $d_4^{20}$  1.1418. In the same manner from 50 g XVI, 35 g KOH and 100 ml  $C_2H_5OH$  are obtained 12 g XV and XVIII, yield 14 g, BP 72-73°/24 mm,  $n_D^{20}$  1.4616,  $d_4^{20}$  1.1101. 17 g XVII and  $C_2H_5ONa$  (from 6 g Na) in 80 ml absolute alcohol boiled 10 hours, added 8 g KOH in 10 ml water and boiled 6 hours, to get  $(CH_3)_2C=CHCOOH$ , yield 4.2 g, MP 69-70° (from water). Into 39.5 g XVII HCl (gas) is passed for 2.5 hours, stratified liquid is poured into HCl, bottom layer is separated,

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and therefrom is obtained X, yield 30.1 g, BP 58-58.5°/15 mm,  $n_D^{20}$  1.4847,  $d_4^{20}$  1.2527. X is also obtained by passing HCl (gas) (-5 to -7°, 3 hours) into 14 g XV in presence of 1 g  $ZnCl_2$ , yield 52%, BP 64°/25 mm. From 26 g  $CH_3CH_2CH_2CH_2CH_2CH_3$  and 1 g  $CH_3CH_2CH_2CH_2CH_2CH_2CH_3$  trile of azo-bis-isobutyric acid (autoclave, 100-105°, 6 hours) is obtained IV, yield 38 g, BP 90°/5 mm,  $n_D^{20}$  1.5030,  $d_4^{20}$  1.4792. From 0.11 mole IV and 0.33 mole  $(C_2H_5)_2NH$  (~ 100°, 18 hours) is synthesized VIII, yield 70%, BP 64-65°/10 mm,  $n_D^{20}$  1.4725,  $d_4^{20}$  1.1403. Ozonation of VIII yields the chloral. From 35.6 g V and  $CH_3ONa$  (from 4.98 g Na in 50 ml  $CH_3CH_3$ ) is obtained (~ 100°, 2.5 hours) 1,1-dichloro-3-methoxybutene-1 (XX), yield 50%, BP 64°/57 mm,  $n_D^{20}$  1.4580,  $d_4^{20}$  1.1722. 15.9 g V and 18.3 g  $(C_2H_5)_2NH$  (boiled 8 hours) form 1,1-dichloro-3-diethylamino-butene-1 (XXI), yield 50%,

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BP 79.5-80°/14 mm,  $n_D^{20}$  1.4690,  $d_4^{20}$  1.0470; hydrochloride, MP 167.5°. Same amounts of V and  $(C_2H_5)_2NH$  heated in 40 ml  $CH_3OH$ , which gives 30% XXI and XX,  $n_D^{20}$  BP 40-41°/15 mm. From 32 g V, 32.8 g  $CH_3COONa$  and 0.5 g KI, in 50 g  $CH_3COOH$  ( $\sim 100^\circ$ , 18 hours) is obtained 1,1-dichloro-3-acetoxybutene-1 (XXII), yield 59%, BP 83-84°/26 mm,  $n_D^{20}$  1.4590,  $d_4^{20}$  1.2234. Structure of XXII is established by converting it by the action of alcohol into XIX, BP 63°/6 mm (in the paper: 1,1-dichloro-3-hydroxybutene-2). Heating of 30 g V and 29 g  $Na_2S \cdot 9H_2O$  in 80 ml alcohol and 10 ml water ( $\sim 100^\circ$ , 6 hours) gives bis-(1,1-dichloro-3-methylpropene-1-yl)-sulfide, yield 40%, BP 104°/5 mm,  $n_D^{20}$  1.5345,  $d_4^{20}$  1.3156, and 1,1-dichloro-3-ethoxybutene-1. From 24.4 g V and sodium malonic ester (from 4.6 g Na and 32 g malonic ester in 80 ml absolute alcohol) is obtained (boiling 3 hours) the ethyl ester of 5,5-dichloro-

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$(C_2H_5)_2NH$  in 25 ml absolute  $C_2H_5OH$  (heating 8 hours)  
are obtained XXIV, yield 4.5 g, and  
1,1-dichloro-3-diethylamino-3-phenylpropene-1, yield  
4.8 g, BP 98-99°/1 mm,  $n_D^{20}$  1.5335,  $d_4^{20}$  1.1116; hydro-  
chloride MP 149-150° (from alcohol-petroleum ether).  
From 11 g VI, 3 g  $AlCl_3$  and 20 ml  $C_6H_6$  is synthesized  
XIII, yield 76%, BP 142-143°/1 mm,  $n_D^{20}$  1.5951,  $d_4^{20}$   
1.2180. By interaction of 17 g VII and 8.5 g KOH in 40  
ml  $CH_3OH$  (15-20°, 16 hours) are obtained a small amount  
of XV and XVII, yield 82%, BP 47-48°/7 mm. Interaction  
of 10 g VII and 16 g  $(C_2H_5)_2NH$  in 30 ml  $CH_3OH$  (heated  
10 hours) gives XV and XVII, yield 77%. BP  
57-58°/14 mm. From 10 g VII and 5 g  $NH_3$  in 40 ml absolu-  
te alcohol (in ampoule, 90-95°, 4 hours) is obtained  
XVIII, with a yield of 6 g, and 1,1-dichloro-3-amino-3-  
methylbutene-1, yield 0.9 g, BP 64-65°/12 mm,  $n_D^{20}$

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Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

1.4785,  $d_4^{20}$  1.1438. On heating (4 hours) 8.7 g VII and 16 g XI in 40 ml absolute  $C_2H_5OH$  there are formed a small amount of XV, 5 g XVIII, BP 61-62°/16 mm, and 1,1-dichloro-3-piperidino-3-methylbutene-1 with a yield of 0.6 g; hydrochloride. MP 248-249° (from alcohol). From 8.7 g VII and  $C_6H_5SNa$  (from 8 g  $C_6H_5SH$ ) in 30 ml absolute alcohol (heating 4 hours) is obtained XVIII, yield 6 g, and 1,1-dichloro-3,3-dimethylpropene-1-yl phenylsulfide, yield 2.1 g, BP 102-103°/1.5 mm,  $n_D^{20}$  1.5705,  $d_4^{20}$  1.1988. On interaction of VII with  $Na_2S$  in  $CH_3OH$  only XVII is formed. Interaction of 16 g VII, 60 ml  $C_6H_6$  and 1.5 g  $AlCl_3$  gives XIV, yield 11 g, BP 80-81°/1 mm,  $n_D^{20}$  1.5411,  $d_4^{20}$  1.1540. 8.4 g XIV are oxidized with 12.5 g  $KMnO_4$  and 6.2 g KOH in 280 ml water (90°, 10 hours) to  $\alpha$ ,  $\alpha$ -dimethyl-phenyl acetic acid, yield 4.9 g, MP 76-77° (from

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USSR/Organic Chemistry - Theoretical and General Questions  
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Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4228

petroleum ether). From 10 g VII and 40 ml  $C_2H_5OH$  (15-20°, for several days) is obtained XVIII. Interaction of 10 g VIII and  $CH_3ONa$  (from 1.15 g Na in 50 ml  $CH_3CH$ ) gives (on boiling for 30 hours) 1,1-dichloro-3-methoxy-4,4-dimethylpentene-1 (XXV), yield 50%, BP 60-61°/9 mm,  $n_D^{20}$  1.4620,  $d_4^{20}$  1.0755. From 7 g VIII and 5 g  $(C_2H_5)_2NH$  in 15 g  $CH_3CH$  ( $\sim 100^\circ$ , 19 hours) is obtained XXV, yield 2.2 g.

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**NESMEYANOV, A.N., akademik.**

**Tasks of the Academy of Sciences in the light of resolutions of the  
20th Congress of the Communist Party of the Soviet Union. Vest.AN  
SSSR 26 no.6:3-24 Jo '56. (MIRA 9:9)**

**1. President Akademii nauk SSSR.  
(Science)**

ИВЕСМЕЯНОВ, Б.З.

USSR/Thermodynamics. Thermochemistry. Equilibria. Physico-Chemical B-8  
Analysis. Phase Transitions.

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26102

Author : A.N. Nesmeyanov, B.Z. Iofa, A.A. Strel'nikov, V.G. Firsov.  
Title : Measurement of Pressure of Saturated Vapors of Solid Alloys  
by Method of Radioactive Indicators.

Orig Pub : Zh. fiz. khimii, 1956, 30, No 6, 1250-1257

Abstract : The pressure of saturated vapors of solid Zn, Cd and Sb and of alloys corresponding by the chemical composition to  $SbZn$  (I),  $Sb_2Zn_3$  (II),  $Zn_3As_2$  (III), and  $Cd_3As_2$  (IV) was measured by Knudsen method in combination with the method of tagged atoms (the radioactive isotopes  $Sb^{124}$ ,  $Zn^{65}$ ,  $Cd^{109}$ ,  $Cd^{113}$  and  $As^{76}$  were used). In accordance with the activity of the deposit on the cooled surface above the evaporator, the vapor pressure was calculated by the formula  $p$  (mm of mercury column) =  $17.14 \cdot I \cdot VT/\alpha \cdot St \cdot KVM$ , where: I is the activity of the deposit in impulses per min.,  $\alpha$  is the specific activity of the substance in impulses per min., S is the area of the diaphragm in sq. cm, t is the duration of the exposition in sec., T is the

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USSR/Thermodynamics. Thermochemistry. Equilibria. Physico-Chemical B-8  
Analysis. Phase Transitions.

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26102

absolute temperature, M is the molecular weight of the substance vapor, K is Klausing's factor. Following equations of the dependence of the vapor pressure on the temperature were found:

$$\log p \text{ Sb (mm of mercury column)} = -1058.6/T + 11.044 (618 - 703^\circ\text{K});$$

$$\log p \text{ Sb (80\% Sb)} = -9514.3/T + 9.720 (624 - 725^\circ\text{K});$$

$$\log p \text{ Sb (65\% Sb)} = -947.0/T + 9.695 (616 - 715^\circ\text{K});$$

$$\log p \text{ Sb (51\% Sb)} = -9350.3/T + 9.131 (623 - 729^\circ\text{K});$$

$$\log p \text{ Zn} = -7039/T + 9.265 (622 - 665^\circ\text{K});$$

$$\log p \text{ Zn (80\% Zn)} = -7287.1/T + 9.398 (526 - 633^\circ\text{K});$$

$$\log p \text{ Zn (30\% Zn)} = -8057.3/T + 9.834 (556 - 658^\circ\text{K});$$

$$\log p \text{ Zn (9.5\% Zn)} = -7874.8/T + 9.205 (570 - 660^\circ\text{K});$$

$$\log p \text{ Cd} = -5866.5/T + 8.748 (416 - 564^\circ\text{K});$$

$$\log p \text{ Cd}_3\text{As}_2 = -8292.5/T + 11.123 (511 - 648^\circ\text{K}).$$

Comparing the vapor pressure above pure components with that above their alloys, the conclusion was arrived at that I and II dissociated completely before evaporation in the solid phase and that a solid pseudosolution formed on the surface.

III and IV do not probably dissociate even in the vapors.

Card : 2/2  $\log p \text{ Zn}_3\text{As}_2 = -8658.1/T + 9.053 (601 - 751^\circ\text{K});$

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USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 968

Author: Vol'kenau, N. A., and Nesmeyanov, A. N.

Institution: Academy of Sciences USSR

Title: Synthesis of Alkylferrocenes

Original

Periodical: Dokl. AN SSSR, 1956, Vol 107, No 2, 262-264

Abstract: The reduction of acylferrocenes to alkylferrocenes has been carried out with a 10-fold excess of Zn amalgam and concentrated HCl in glacial  $\text{CH}_3\text{COOH}$  (the yield in percent, bp in °C/mm,  $n_D^{20}$ , and  $d_4^{20}$  are given): acetylferrocene to ethylferrocene, 67, 108-109/5.5,  $n_D^{20}$  1.6017,  $d_4^{20}$  1.2469; diacetylferrocene (I) to diethylferrocene (II), 40-50, 123-124/5.5, 1.5803, 1.1787; dipropionylferrocene (III) to dipropylferrocene, 70, 137-138/5, 1.5619, 1.1244; dibutyrylferrocene (IV) to dibutylferrocene, 60, 164-165/6, 1.5511, 1.1086; dibenzoylferrocene (V) to dibenzylferrocene, 60, mp 101.5-102.5° (from petroleum ether). III, IV, and V were prepared by reacting

Card 1/2

NESMEYANOV, A.N., akademik; VOL'KENAU, N.A.

Acylation of acetyl- and ethyl-ferrocene. Dokl. AN SSSR 111  
no.3:605-608 N '56. (MLBA 10:2)

1. Institut elementoorganicheskikh soedineniy Akademii nauk  
SSSR.

(Acylation) (Iron organic compounds)

KESMEYANOV, A.N.; REUTOV, O.A.

Using diazo compounds for the synthesis of metallo-organic compounds  
of elements of the fifth group of the periodic system. Uch.zap.Mosk.  
un. no.175 '56. (MIRA 10:3)

(Diazo compounds) (Organometallic compounds)  
(Chemical elements)

~~NESMEYANOV, A.N.;~~ KOCHETKOV, N.K.

$\beta$ -Chlorovinyl ketones in the synthesis of heteracyclic compounds.  
Uch.zap.Mosk.un. no.175:85-95 '56. (MIRA 10:3)  
(Heteracyclic compounds)  
(Ketones)

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SHUNKOV, V.I., otvetstvennyy redaktor; GUSSEN, L.V., redaktor izdatel'-  
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TOPCHIEV, A.V., akademik, samostitel' glavnogo redaktora;  
ISAKOVA, O.V., otvetstvennyy redaktor; SHUNKOV, V.I.,  
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*12-00000000, 12.12.*  
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LIKHTENSHTEYN, Ye.S., otv.red.; SHUNKOV, V.I., otv.red.;  
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(Petrovskii, Ivan Georgievich, 1901- )

SOV/112-58-2-2751

Translation from: Referativnyy zhurnal, Elektrotehnika, 1958, Nr 2, p 151 (USSR)

AUTHOR: Nesmeyanov, A. N.

TITLE: A Session of the Academy of Sciences, USSR, on the Scientific Problems of Automating Production. A Closing Speech (Sessiya Akademii nauk SSSR po nauchnym problemam avtomatizatsii proizvodstva. Zaklyuchitel'noye slovo)

PERIODICAL: V sb.: Sessiya AN SSSR po nauchnym problemam avtomatiz. proizvodstva, 1956, Plenarn. zasedaniya. M., AS USSR, 1957, pp 262-271

ABSTRACT: Maintaining a preset course of a technical process used to be the fundamental problem of automated systems, specifically of an automatic regulation system; today, the problem of automatically maintaining the optimum operating conditions of automatic equipment and of the entire production machinery by means of computers has become possible. Great attention was paid at the Session to the problems of developing new automatic elements based on various radiations (radioactive, acoustical, electromagnetic); research trends in the development of reliable and high-speed automatic equipment were

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SOV/112-58-2-2751

A Session of the Academy of Sciences, USSR, on the Scientific Problems of . . . .

considered, specifically devices that use no-contact magnetic and dielectric elements, and also combined electrohydraulic and electropneumatic devices. Fundamental directions were considered in the development of automatic drive and design principles for automatic control, theoretical problems of automatic machines, automatic lines, and program-control automatic equipment. The need for expanding the scientific activities of academic institutes and educational institutes in the field of automation is acknowledged. Cooperation with scientific and production organizations in every branch of industry should become one of the basic forms of such activities.

D.A.I.

Card 2/2

NESMEYANOV, A. N.

**AUTHORS:**

Freydlina, R. Kh.; Braynina, E. M.; Nesmeyanov, A. N. 62-1-6/21

**TITLE:**

Interchange Reactions of Zirconium Tetraacetylacetonate (Obmennyye reaktsii tetraacetylatsetonata tsirkoniya)

**PERIODICAL:**

Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1957, No. 1, pp. 43-47 (U.S.S.R.)

**ABSTRACT:**

This report is devoted to the study of interchange reactions of zirconium tetraacetylacetonate, which appears to be one of the easily accessible chelate compounds. The possibility of converting zirconium tetraacetylacetonate into other less-accessible chelate compounds of octo-coordination zirconium, was investigated. The conversion into hexacoordinated Zr compounds and into alkylorthozirconates was also studied. It was established that the reaction between zirconium tetraacetylacetonate and benzoyl acetone leads to an interchange between the radicals of one beta-diketone into radicals of another beta-diketone and the formation of zirconium tetrabenzoyl acetate,

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Interchange Reactions of Zirconium Tetraacetylacetonate 62-1-6/21

a product which cannot be obtained by any other method. The reaction of zirconium tetraacetylacetonate with salicylaldehyde leads to the formation of a chelate compound  $(OC_6H_4CHO)_4Zr$ , a solid product, hardly soluble in organic solvents and easily forming other complexes such as binary compounds with one chloroform molecule  $(OC_6H_4CHO)_4Zr \cdot CHCl_3$ .

It was found that tetraacetylacetonate and tetrabenzoylacetonate react easily with acetyl chloride forming homologous zirconium chlorides. The reaction of zirconium tetraacetylacetonate with a surplus of butyl and benzyl alcohols gave homologous butylorthozirconate and benzylorthozirconate. It was concluded that the conversion from chelate Zr compounds into simple orthozirconic acid esters is perfectly possible.

Card 2/3

Interchange Reactions of Zirconium Tetraacetylacetonate 62-1-6/21  
ASSOCIATION: Academy of Sciences of the USSR, Institute of Elemento-Organic  
Compounds  
PRESENTED BY:  
SUBMITTED: January 21, 1956  
AVAILABLE: Library of Congress

Card 3/3

NESMEYANOV, An.N.; SAZONOV, L.A.

Measuring vapor pressure of saturated potassium chloride and partial  
vapor pressures of components in the system KCl -- RbCl by means of  
radioactive indicators. Zhur. neorg. khim. 2 no.5:1183-1189 Ky '57.  
(Vapor pressure) (Potassium chloride) (Rubidium chloride)  
(MIRA 10:10)

*NESMEYANOV, A.N.*

LAPITSKIY, A.V.

"Practical manual of radiochemistry" by A.N. Nesmeyanov and  
others. Reviewed by A.V. Lapitskii. Khim.prom. no.3:191  
Ap-My '57. (MLRA 10:7)

(Radio chemistry)  
(A.N. Nesmeyanov)

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NESMEYANOV, A. N.

AUTHOR  
TITLE

NESMEYANOV, A. N.

89-9-6/32

The Use of Radioactive Isotopes in Measuring the  
Pressure of Saturated Steam.

(Ispol'zovaniye radioaktivnykh izotopov dlya o-  
predeleniya davleniya nasychennogo para)

PERIODICAL

Atomnaya Energiya, 1957, Vol 5, Nr 9, pp 227-231  
(U.S.S.R.)

ABSTRACT

The following methods were described on the basis of the  
devices by means of which it is possible to determine  
steam pressure.

1.) Statistical method

Variety a): Immediately in the given vapor chamber,  
which is in equilibrium with the condensation phase,  
steam pressure is measured by means of a mercury  
ionization- or quartz manometer.

Variety b): The molecule number of the gases in a  
known volume is determined for an assumed temperature.

2.) Boiling point method.

3.) Dynamical or radiation method.

Here a gas is led by way of a material heated up to a  
certain temperature, which does not react with the gas  
of the heated material. The velocity with which the gas

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89-9-6/32

The Use of Radioactive Isotopes in Measuring the  
Pressure of Saturated Steam.

of the heated material is transported away depends upon  
the velocity with which the inert gas passes over the  
material.

4. The Longmuir Method:

In the vacuum the quantity of steam separated by  
1 cm<sup>2</sup> per time unit is measured.

5. A fusion method.

Here the quantity of steam is measured which enters  
through a small hole into a vacuum (according to  
Knudsen)

6. The method of isotope exchange.

This method is based on the exchange in the vacuum of  
molecules in the gaseous phase between two materials  
having the same chemical but a different isotopic com-  
position. The described methods have the following sen-  
sitivity:

Longmuir	10 <sup>-12</sup>	MM Hg
Knudsen (integral method)	10 <sup>-9</sup>	MM Hg
Knudsen (differential method)	10 <sup>-7</sup>	MM Hg
Isotope exchange	10 <sup>-12</sup>	MM Hg
statistical method	10 <sup>-7</sup>	MM Hg

CARD 2/3

89-9-6/32

The Use of Radioactive Isotopes in Measuring the  
Pressure of Saturated Steam.

(1 Table, 12 Illustrations and 29 Slavic references)

ASSOCIATION: not given.  
PRESENTED BY: -  
SUBMITTED: 19.6. 1957  
AVAILABLE: Library of Congress.

CARD 3/3

RESMEYANOV, A.N.; FREYDLINA, R.Kh.; PETROVA, R.G.

Obtaining  $\alpha, \ell$ -Proline and  $\alpha, \ell$ -Ornithine from 1,1,1,5-Tetrachlor-pentane. Izv.AN SSSR Otd.khim.nauk no.4:451-458 Ap '57. (MIRA 10:11)

1. Institut elementoorganicheskikh soedineniy AN SSSR.  
(Proline) (Ornithine) (Pentane)

NESMEYANOV, A.N.; PERVALOVA, E.G.; GOLOVNYA, R.V.; SIMUKOVA, N.A.;  
STAROVSKIY, O.V.

Reactivity of mono- and di(p-nitrophenyl) ferrocene and biacetyl-  
ferrocene, Izv. AN SSSR. Otd. khim. nauk no.5:638-640 My '57.  
(MLRA 10:8)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.  
(Iron)

NEZMEYANOV, P.N.

NEZMEYANOV, A.N.; RYUTOV, O.A.; BUNDEL, Yu.G.; BELETSKAYA, I.P.

Syn thesis of mixed organoarsenic compounds of the type  $Ar\ Ar'AsX$   
and  $Ar\ Ar'Ar''As$  via binary diazonium salts. Izv. AN SSSR, Otd. khim.  
nauk no.8:929-941 Ag '57. (MIRA 11:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.  
(Arsenic organic compounds)

~~RESMEYANOV, A.N.~~; LUTSENKO, I.F.; KHOMUTOV, R.M.

Addition of mercury salts to vinyl ethers and esters in an alcohol medium. Izv. AN SSSR. Otd. khim. nauk no.8:942-948 Ag '57.  
(MIRA 11:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.  
(Mercury salts) (Vinyl ether) (Vinyl alcohol)

NESMEYANOV, A.N.

KOCHETKOV, M.K.; NIFANT'YEV, M.Ye.; NESMEYANOV, A.N.

Cyclic acetals of  $\beta$ -ketoaldehydes and their utilization in the  
synthesis of alkylnaphthalenes. Izv. AN SSSR. Otd. khim. nauk  
no.8:949-955 Ag '57. (MIRA 11:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.  
(Acetals) (Naphthalene)

~~NESMEYANOV, A.N.~~

KOCHETKOV, N.K.; KHOMUTOVA, Ye.D.; MIKHAYLOVA, O.B.; NESMEYANOV, A.N.

Synthesis of arylpyrazoles. Izv. AN SSSR Otd. khim. nauk  
no.10:1181-1185 0 '57. (MIRA 11:3)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.  
(Pyrazole)

*NESMEYANOV, A. N.*

26-11-3/16

**AUTHOR:** Nesmeyanov, A.N., Academician, President of the USSR Academy of Sciences

**TITLE:** The Most Important Advances in Natural Science in the USSR  
(Krupneyshiye uspekhi sovetskogo yestestvoznaniya)

**PERIODICAL:** Priroda, 1957, # 11, p 9-22 (USSR)

**ABSTRACT:** The author gives a review of the achievements of Soviet scientists during 40 years of the Communist regime. Radical political and economic transformation caused by the October Revolution opened up a new era in the development of science. The goal set by the Communist party was to make rapid progress in the industrialization of the country, to increase production and to solve the foremost economic problems. This necessitated an equal development of theoretical and practical research in all fields of science. The Academy of Sciences was made the operational center of learning which now coordinates scientific research in the entire USSR. Universities, laboratories and institutes turn out new cadres of specialists who under the control of the party will work in well coordinated teams on the main problems to be solved.

Card 1/2

*NES MEYANOV, A. N.*

62-11-15/29

AUTHORS: Nesmeyanov, A. N., Sazonova, V. A.,  
Drozd, V. N.

TITLE: On the Magnesium-Organic Compound of the Selenophene  
(O magniyorganicheskom soyedinenii selenofena).

PERIODICAL: Izvestiya AN SSSR, Otdelenie Khimicheskikh Nauk, 1957,  
Nr 11, pp. 1389-1391 (USSR)

ABSTRACT: In connection with the investigation of tetraarylboronic salts and the investigation of the reaction-process-possibility in the case of potassiumborofluoride with RMgX in the heterocyclic series here experiments were carried out in order to obtain iodide- $\alpha$ -selenenile-magnesium. It became evident that this metalorganic compound develops in an ester-solution from the  $\alpha$ -iodoselenophene and magnesium when applying ethylene bromide as reaction accompanying matter. The iodide- $\alpha$ -selenenile-magnesium enters reaction with CO<sub>2</sub>, benzophenone and produces  $\alpha$ -selenophenecarbonic acid or diphenil- $\alpha$ -selenenilecarbinol respectively. In the reaction with potassiumborofluoride tetra-( $\alpha$ -selenenile)boropotassium

Card 1/2

On the Magnesium-Organic Compound of the Selenophene.

62-11-15/29

develops, which reminds of the analogous compound of the thiophene as to its properties (reference 3). Tetra-( $\alpha$ -selenenile)boropotassium precipitates the rubidium-ions and a little more completely the ions of the cesium and of the quaternary ammonium from the aqueous-solutions. There are 3 references, 2 of which are Slavic.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova).

SUBMITTED: July 6, 1957.

AVAILABLE: Library of Congress

Card 2/2

NESMEYANOV, A.N.

NESMEYANOV, A.N., akademik

To new heights. IUn.tekh.no.12:1-2 D '57.

(MIRA 10:12)

1. President AN SSSR.

(Science)

~~PIERRE CURIE, A.M.~~

In memory of Pierre Curie. Trudy Inst. ist. est. i tekhn. 19:7-9  
'57. (MIRA 11:2)

1. President AN SSSR.

(Curie, Pierre, 1859-1906)

NESMEYANOV, A.N.; LOBANOV, P.P.; BAKULEV, A.N., laureat Leninskoy premii;  
BEKHTIN, N.V.; KAIROV, I.A.

Presidents of five academies greet you. Tekh. mol. 25 no.7:2-3  
Jl '57. (MLRA 10:8)

1. President Akademii nauk SSSR (for Nesmeyanov). 2. President  
Vsesoyuznoy Akademii sel'skokhozyaystvennykh nauk imeni V.I.  
Lenina (for Lobanov). 3. President Akademii meditsinskikh nauk  
SSSR (for Bakulev). 4. President Akademii pedagogicheskikh nauk  
SSSR (for Kairov). 5. President Akademii stroitel'stva i arkhitektury SSSR (for Bekhtin).

(Youth--Congresses)

*NESMEYANOV AN*  
NESMEYANOV, A.N.

Forty years of Soviet research. Tekh.mol. 25 no.12:2-4 D '57.  
(MIRA 11:1)

1. Prezident AN SSSR.  
(Research)

*NES MEYDNOV, D. N.*

74-11-3/7

**AUTHORS:** Nesmeyanov, A. N. , and Kabachnik, M. I. (Moscow)

**TITLE:** The Organic Chemistry of the USSR Since 40 Years (Sovetskaya organicheskaya khimiya za 40 let)

**PERIODICAL:** Uspekhi Khimii, 1957, Vol. 26, Nr 11, pp. 1241 - 1294 (USSR)

**ABSTRACT:** Although chemists like Mendeleev and Butlerov took an active part in the structure of organic chemistry in pre-revolutionary Russia, the Soviet-Union had to perform an immense, wide-ranging work for its further development both theoretically and practically. The attained successes are entirely due to the activity of the scientific and technical institutes. The jubilee articles contain the most important and also practically utilized synthesis. The increasing utilization of both physical and physico-chemical methods of investigation of organic compounds and reactions, are a characteristic feature of the last decades. The frequent application of all sorts of optical spectroscopy of X-ray structure analysis, of dielectrical, magnetical and radiospectroscopical methods of X-ray spectra plays an important rôle. The elaborate studies of ~~V.~~ K. Syrkin and his students were devoted to the investigation of the fine structure of the organic molecules. Zavoykiy discovered recently the method of paramagnetic resonance. The analysis of struc-

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74-11-3/7

The Organic Chemistry of the USSR Since 40 Years

ture by means of X-rays became largely diffused. The merit of having elaborated new important problems of crystallo-chemistry must be conferred to A. I. Kitaygorodskiy. G. B. Bokiy investigated systematically the structure of complexes of organic molecules with metallic salts. B. A. Arbuzov succeeded to explain the structure and "conformation" of whole series of elemento-organic compounds (elemento-organicheskikh soyedineniy). There are 418 references, all of which are Slavic.

AVAILABLE: Library of Congress

Card 2/2

NESMEYANOV, A.-N.

PA - 2502

AUTHOR

NESMEYANOV, A.N., President of the Academy of Science of the USSR.

TITLE

On the Main Trends of the Academy of Science of the USSR  
(Ob osnovnykh napravleniyakh Akademii Nauk SSSR - Russian)

PERIODICAL

Vestnik Akademii Nauk SSSR, 1957, Vol 27, Nr 2, pp 3-42, (U.S.S.R.)  
Received 5/1957

Reviewed 6/1957

ABSTRACT

In the introduction the commentary is mentioned which was made by the chairman on the directives issued by the XX. Party Congress. The further development of the Marxist theory is, among other things, described as being the principal aim of Soviet science. No neutral, party-less or objective attitude is to be tolerated. In the following, individual scientific fields are dealt with. It was declared that in mathematics the USSR occupied first place, which was to a great extent due to the introduction of large electron computers. Lack of progress could be found only within the fields of cybernetics. In physics, particular progress was made in nuclear physics. Russia possesses the world's largest phaseotron which accelerates proton bundles of up to 700 MeV, which made the discovery of the laws of nucleon interaction possible. It is further pointed out that the construction of the world's largest accelerator (1000 MeV synchrophastrom) will soon be completed. The department of physics and mathematics is the largest of the Academy, but it will nevertheless be extended because the greatest importance is attached to work carried out within the field of nuclear physics. Solar research is described as the most important problem of astronomy, particularly with

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On the Main Trends of the Academy of Science of the USSR PA - 25o2  
 respect to investigations of thermonuclear reactions. More than 100 institutions from the USSR took part in the Geophysical Year. For Technical Science coordination of work and intensification of electrification, mechanization, and automation is considered to be of essential importance. The tasks to be performed by chemistry extend over nearly all fields of chemistry, but particularly over those of physical, organic, and quantum-chemistry. It is planned to establish an institute for radiochemistry. In the field of biology a whole number of fields which are in need of development are mentioned, among them electron microscopy, biophysics, biochemistry, and microbiology (particular for virus research). Much progress was made by Geology owing to the ever increasing demand for mineral raw material. Very accurate tectonical and geological maps of USSR territory have been produced in the course of recent years. Unfortunately, cooperation between geology and geophysics is not quite satisfactory. The study of Production Forces is described as traditional. Much has been achieved in this field, particularly with respect to the Eastern territories of the USSR, where main attention was devoted to the districts of Krasnoyarsk, Tuvinisk, Yakutsk, Magadan, Kamchatka, Angaro-Yeniseysk, Baikal, and Great-Turgay. It will be the task of Special Science to study the problems of capitalism and socialism. The publication of a "History of the World" in 10 volumes is in preparation. The first volume has already been published. This work deals with the history of the world

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On the Main Trends of the Academy of Science of the USSR. PA - 2502  
seen from the Marxist point of view. There are 2.800 research insti-  
tutes in the USSR of which 1230 belong to the Academy of Science  
(39 were created only in 1939). The academy has 145 regular and 319  
corresponding members.

ASSOCIATION  
PRESENTED BY  
SUBMITTED  
AVAILABLE  
Card 3/3

Library of Congress

НЕ СМЕЛ ПИШИТИ.

30-11-3/23

**AUTHOR:** None Given.

**TITLE:** Lecture by A. N. Nesmeyanov, Member of the AN USSR, on  
"40 Years of Soviet Science" (Doklad akademika A. N. Nesmey-  
anova "40-let sovetskoy nauki")

**PERIODICAL:** Vestnik AN SSSR, 1957, Vol. 27, Nr 11, pp. 17-36 (USSR)

**ABSTRACT:** At first the speaker deals with the development of all branches of knowledge in the USSR and then concretely enters into the individual branches. During these 40 years soviet science attained its manly maturity. A number of eminent scientists from the pre-revolution ary period layed the fundament to the present fine building of science, such as the mathematicians M. A. Ostrogradskiy and P. L. Chebishev, the physicists Luzin and S. N. Bernshteyn, the great man of learning Vinogradskiy and the autodidact of genius Tsiolkovskiy. Although Stoletov, Umov, and Lebedev were eminent scientists, the real victorious onward march only began in the Soviet era. The development of theoretical physics and its brilliant results of research, the establishment of the mathematical foundations of the quantum theory of the field, the new information in the domain of relativity, the discovery of the oombined dispersion of light (Mandel'shtam and Landsberg), the investigation of the phenomenon of luminescence, I. V. Kurchatov's discovery, the fine successes in the

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Lecture by A. N. Nesmeyanov , Member of the AN USSR, on  
 "40 Years of Soviet Science".

30-11-3/23

field of radio engineering be cited here. With the year 1933 a new stage begins with the construction of the first accelerator of charged particles and the discovery of the neutron. At this time the triumphal march of Soviet physics began. In the post-ward period great achievements were attained in the field of the construction of nuclear reactors. Soviet engineering also achieved extraordinary successes - especially in the field of the construction of turboalternators (turboalternators up to 300 000 kvt (kW ?) ). The achievements in the domain of chemistry also are outstanding - only to mention Arbuzov, A. N. Orekhov and the biochemist A. N. Bakh. The author then mentioned I. P. Pavlov (and the method of conditional reflexes and the theory of the highest nerve-function developed by him) whose successes became famous all over the world. But his scholars already attained great achievements, too. Botany also took a very favorable development in the USSR. I. V. Michurin developed a theory of the acclimatization of Southern plants. His methods of hybridization (gibridizatsiya) also were successful. T. D. Lysenko not only developed theories, his practical successes were to the benefit of agriculture. N. V. Tsitsyn discovered the general law governing the formative processes. The geologic-geographical

Card 2/3

Lecture by A. N. Nesmeyanov,  
"40 Years of Soviet Science".

Member of the AN USSR, on

30-11-5/23

science also achieved great success. The former work of Lomonosov, Karpinskiy, Vernadskiy, and V. A. Obruchev exerted a fruitful influence here. The natural sciences were a determining factor in the rise of the Soviet country, and the arts gave the Soviet people the equipment in the fight for the progress and the liberation of mankind. There are 2 Slavic references.

AVAILABLE: Library of Congress

Card 3/3

USSR/General Division. General Problems. Philosophy. Metho- A-1  
dology

Abs Jour : Ref Zhur-Biologiya, No 3, 1958, 9222

Author : A. N. Nesmeyanov

Inst :

Title : On the Basic Trends in the Work of the Academy of Sciences USSR

Orig Pub : Vestn. AN SSSR, 97, No 2, 3-42

Abstract : The activity of the Academy of Sciences USSR is discussed in the light of the tasks outlined by the 20th session of the Communist Party of the Soviet Union. The immediate conclusions to be drawn from the resolutions of the session must be made by scientists working in the areas of social as well as natural and technical sciences. The intensification of theoretical

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of the Academy of Sciences USSR, including the fields of mathematics, physics, astronomy, chemistry, geology, geography, and technical and social sciences. In regard to the problems of biology, the breadth and depth of the front of biological science, the variety of methods, and

APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R001136620

Card 2/7

The role of nucleoproteins and nucleotides in the most intimate life processes of the cells is elucidated. The Chemistry of mitoses and the phenomena of heredity are being brought to light. The science

Card 3/7

Abs Jour : Ref Zhur-Biologiya, No 3, 1958, 9222

Abstract : of chemical genetics is being developed. The experimental investigations conducted by biochemists have clarified and brought to light the essence of the chemical transformations which take place in separate parts of the chromosomes and which end in the development of a number of characteristics in adult individuals. Contact is being established between genetics and theory of information. Cytochemistry is being developed. The study of viruses is proceeding at a rapid tempo and the role of the nucleic acid part of their

USSR/General Division. General Problems. Philosophy. Metho- A-1

Abs Jour : Ref Zhur-Biologiya, No 3, 1958, 9222

Abstract : in the development of the descriptive and systematic trends of biology-classification of animals, plants and microbes, as well as research in ecology, biocenology, and others. It is pointed out, however, "that a diagnosis of the condition of biology in the Academy of Sciences USSR should be based to a considerable degree on the pulse of the branches of biology which have common frontiers with physics and chemistry." Along with the enumerated individual achievements of biology in the solution of various problems of physiology, biochemistry and biophysics, microbiology, faunistics, and floristics, and others, a lag is noted in cytological, cytophysical, and cytogenetic investigations as well as in research of electron microscopy and virology. Confidence is expressed in the

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EXCERPTA MEDICA Sec.17 Vol.4/2 Public Health, etc. Feb 58

NAVRAŤIL, M.

584. RESPIRATORY AND CIRCULATORY SYSTEM FUNCTION TESTS IN WORKERS WITH PROLONGED EXPOSURE TO ASBESTOS DUST. Výsledky funkčního vyšetření systémů dýchání a oběhu u pracovníků s dlouholetou expozicí asbestovému prachu. Navrátil M. Ústav. Hyg. Práce a Chorob z Povolání, Praha. PRAVOCNÍ LEK. (Praha) 1956, 8/5 (329-333)

Graphs 2

Fast vital capacity recording, ventilation equivalent and ECG were used for testing 60 employees of an asbestos factory. The effects of age, sex and associated disease conditions (emphysema) were marked in those over 50 regardless of X-ray findings of asbestosis. Exercise tolerance was significantly lower (expressed as O<sub>2</sub> ventilation equivalent) in those suffering from marked asbestosis.

Blumberg - Jevíčko (XV, 6, 17)

USSR/General Division. General Problems. Philosophy. Metho- A-1  
dology

Abs Jour : Ref Zhur-Biologiya, No 3, 1958, 9222

Abstract : rapid progress of biology and in the growth of its specific weight among other sciences. This requires the adoption of a number of organizational measures, and first of all the guarantee of complete and normal scientific contacts, sincere scientific criticism, tests in an environment of free discussions based on substantiated scientific argumentation. Especially noted is the importance of the abstract journals and of the VINITI as a whole and the necessity for the creation of synthetic monographs, especially in the areas which touch on the development of science.

Card 7/7

PA - 2916

AUTHOR

NESMEYANOV A.N., Member of the Academy of Science,  
FREIDLINA R.Kh., CHUKOVSKAYA E.Ts.,

TITLE

Thermal Telomerization of Trichlorsilane With ethylene.  
(Termicheskaya telomerizatsiya trikhlorosilana s etilenom -Russian)  
Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 1, pp 120-122, (U.S.S.R.)

PERIODICAL

Received 6/1957

ABSTRACT

The silicon compounds containing a Si-H-binding are able to bind themselves to a double or triple binding of many organic compounds. In a former paper we gave a survey of such reactions. Recently, an affiliation of trichlorsilane to a double-binding of acronitrile, 2-vinylpyridinium and allylzyanide was described and an ion mechanism for these reactions was suggested. Nozakura showed that tetrapyridinium nickel chloride catalyzes the affiliation of trichlorsilane to vinyltrichlorsilane, 1-octane and stirol. Our experiment i.e. the telomerization reaction in the case of methyldichlorsilane, ethyldichlorsilane, triethylsilane with ethylene and propylene in presence of benzoyl-superoxide or tertiary butyle-peroxide at 100-140° and 100-300 atm. overpressure failed. We succeeded only at 260-275° and 560 atm. overpressure. Here we report only on the reaction of trichlorsilane with ethylene. The telomerization reactions which we investigated as well as the affiliation reactions described in publications were at the expense of the Si-H-formation, a fact which is proved by the lack of this binding in the obtained compounds. The construction of the latter is confirmed by the determination of molecule-refraction as well as by the obtaining of corresponding trimethylalkylsilane

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Thermal Telomerization of Trichlorsilane With Ethylene. PA - 2916

by the Grignard-reaction.

The yields of trichloralkylsilanes of different molecular weights show a certain conformity which is characteristic of the telomerization reaction (we noted that for the case methyltrichlorsilane-ethylene): the highest yield was obtained for the compound for which it is true that  $n=2(25-26\%)$ . The yield of the other alkyltrichlorsilanes is reduced with rising  $n$ -value and forms  $4\%$  of the sum of all products for  $n = 5$ .

Conclusions: The reaction of the thermal telomerization of trichlorsilane with ethylene at a temperature of  $270-285^\circ$  and a pressure of 200 atm. overpressure was realized. From the obtained mixture of products alkyltrichlorsilane of a structure  $Cl_3Si(CH_2CH_2)_nH$  was isolated and its trimethyl derivatives were obtained by the Grignard-reaction.  
(with 2 tables)

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AUTHEOR NESMEYANOV A.N., Member of the Academy, RYBINSKAYA M.I. 20-2-28/67  
 BELSKIY N.K.,  
 TITLE Synthesis of 4-Alkyl-1-Azadehydroquinolinisium Salts.  
 (Sintéz soley 4-alkil-1-aza-degidrekhinoliniziniya -Russian)  
 PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 2, pp 343-346 (U.S.S.R.)  
 Received 6/1957 Reviewed 7/1957  
 ABSTRACT In a series of former Papers the synthesis of a number of heterocyclic systems containing nitrogen and oxygen was carried out. The author here preceded from the  $\beta$ -chloro-vinyl-ketenes and their nearest transformation products. In recent times scientists became more and more attentive to the synthesis of condensed aromatic heterocyclic systems, in which heteroatom is represented by an ammonium-nitrogen which is common to both cycles. The authors obtained the synthesis of several derivatives of such a system - that is of a new condensed heterocyclic system of the aza-analogy of dehydroquinolinisium (II). Its salts are obtained from  $\alpha$ -aminopyridine and a few  $\beta$ -ketoacetals. Moreover it was found that the  $\beta$ -ketoacetals enter into a condensation reaction with  $\alpha$ -aminopyridine. Here the acetal group reacts, because both dimethyl-acetal and diethyl-acetal of the aceto aldehyde produced the same reaction product on the occasion of condensation with  $\alpha$ -aminopyridine, that is: 2-acetoacetalaminopyridine. The substances obtained: 2-acetylacetalaminopyridines are colorless or slightly colored compounds and crystallize with difficulties from different organic solving agents. They can be cyclized under water elimination and under the influence of

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Synthesis of 4-Alkyl-1-Azadehydroquinelisinium Salts. 20-2-28/67  
~~SECRET~~  
condensed acids, and a new heterocyclic system develops-4-alkyl-1-a-  
zadehydroquinelisinium salts. The best results are obtained when app-  
lying hydrochloric and bromide-hydrogen acids. They are crystalline  
substances, easily soluble in water, moderately soluble in hot alcohol,  
whereas indissoluble in ether and benzol. Their perchlorates are more  
stable than bromides. They lack non-aromatic double bonds in both of the  
condensed cycles, as the bromate absorbs 5 mol hydrogen on the occas-  
ion of catalytical hydration over platinum. 4-methyl-1-aza-octahydro-  
quinelisin-bromide develops. The cyclization as above, however, is not  
possible in the case of  $R=C_6H_5$ . By means of hydrogen acid the authors  
obtained  $\alpha$ -aminopyridine salt and acetophenone whereas under the influ-  
ence of the gaseous bromine hydrogen in ether the bromal hydrate of the  
 $\alpha$ -aminopyridine and tribenzoylbenzol develop. In addition the results of  
the spectrum analysis are quoted. The character of the spectrum is deter-  
mined by the azadehydroquinelisinium nucleus. This nucleus is similar to  
those of quinoline and isequinoline with regard to absorption-domain  
and-character. The spectrum is divided into three parts as in the case  
of the latter. In the experimental part methods of preparation, yields and  
formulas of the substances dealt with are given. (111. 16 citations).  
Institute for element-organic Compounds of the Academy of Science of  
the U.S.S.R.

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2.11.1956  
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AUTHOR  
TITLE

NESMEYANOV A.N., Member of the Academy  
Homolytic Isomerization of 1,1,1-Trichloro-2-Bromopropen.  
(Gomoliticheskaya izomerizatsiya 1,1,1-trikhlor-2-brompropenya-Russian)

PERIODICAL

Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 4, pp 828-831 (U.S.S.R.)  
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20-4-30/61

ABSTRACT

Up to the most recent times the question of the possible rearrangement of the free radical in solutions was disputed. So far a number of rearrangements within the radicals by aryl migration was described in detail. In the present paper the authors report on the above mentioned isomerization in 1,1,2-trichloro-3-bromopropen according to the scheme:  $\text{CCl}_2\text{CHBr} \rightleftharpoons \text{CCl} = \text{CH}_2\text{Br}$ .

If a sample of this compound is left 1-2 days after the induction period, or if it is exposed for a few minutes to a mercury-lamp, it is completely isomerized in 1,1,2-trichloro-3-bromopropen. Adding hydroquinone or dimethylaniline to the 1,1,1-trichloro-2-bromopropen delays the isomerization at least for 1 month. The authors mention a scheme according to which isomerization is to take place. The obtained isomerization differs in its direction from the anionotropic allyl-rearrangement of the same compounds. This was proved by the authors. It takes place under the influence of antimony-pentachloride or chloride of aluminum. The production methods of both substances are mentioned. Further substances of this group (II.-VII.) together with production methods and the proofs of their structures are given. Schedule 1 shows their analyses and a few constants. Moreover, further observations are mentioned which were made incidentally in the course of

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20-2-28/60

AUTHORS: Nesmeyanov, A. N. , Member of the Academy,  
Perevalova, E. G. , Churanov, S. S.

TITLE: Ferrocene Sulphoacids (Ferrotsensul'fokisloty)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 2, pp. 335-338  
(USSR)

ABSTRACT: The authors produced these compounds by using the method devised by A. P. Terent'yev and consisting of action by pyridinsulphotrioxide on ferrocene. V. Weinmayr obtained them at the same time only as ammonium salts at interaction of ferrocene and sulphuric acid in acetic anhydride. The paper under review describes the ferrocene sulphonation by pyridinsulphotrioxide in dichlorethane and by dioxansulphotrioxide, further the insulation of the free mono- and di-ferrocene-sulphonic acid, of some of its salts, of the methylethers and of chloranhydride of the ferrocenesulphonic acid. In the above-mentioned reaction, which is brought about by heating through four hours, the mono-acid (84 % of the ferrocene entering the reaction) is produced. 22 % of ferrocene remain unchanged. By longer heating, 41 % of the dio-acid with small

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## Ferrocene Sulphoacids

amounts of the mono-acid are brought about. Only 7 % of ferrocene remained unchanged. The sulphonic acids are insulated as barium salts and lead salts. The free mono-acid is produced from the lead salt by treatment with hydrogen sulphide, as well as at ferrocene sulphonation with dioxansulphotrioxide at normal room temperature. Yield 62 %; 54 % ferrocene unchanged. Free di-sulphonic acid was produced at sulphonation with dioxan-sulphotrioxide in dichlorethane. Here it is eliminated as a complex with dioxane. Yield 85 %. Also in ferrocene sulphonation with sulphuric acid in acetic hydride free disulphonic acid was insulated, crystallizing with four molecules of water. Yield amounting to 51 % of the theoretical yield. The potentiometric titration produced a curve typical for a monobasic acid. This signifies a close relationship between the first and the second constant, and consequently a lower mutual influence of the two sulphonic groups. This suggests a position of the sulphonic groups in different nuclei of the ferrocene molecule. For both acids, S-benzylthiuronium salts and salts with several amines were obtained. Under influence of diazomethane, methylethers of the above acids were produced which are soluble in organic

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Ferrocene Sulphoacids

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solvents. Chlorine anhydride of the mono-acid is easily produced with good yield at shorter heating of the mono-acid or of its lead salt, with abundance of  $\text{PCl}_3$ . Unlike aromatic sulphonic acids, the acids under consideration are less hygroscopic and they are more easily insulated in their free state. The experimental part of the paper under review contains a description of the production methods together with constants and yields. There are 3 references, 2 of which are Soviet.

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20-114 3-29/60

**AUTHORS:** Nesmeyanov, A. N., Member of the AS USSR, Freydlina, R. Kh.,  
Belichko, F. K.

**TITLE:** Synthesis and Chemical Transformations of Trichloromethyl and  
 $\omega, \omega$ -Dichlorallyl Compounds of Mercury (Sintez i khimicheskiye  
prevrashcheniya trikhlorometil'nykh i  $\omega, \omega$ -dikhloralil'nykh  
soyedineniy rtuti)

**PERIODICAL:** Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 3, pp. 557-559 (USSR)

**ABSTRACT:** As far as organic compounds of mercury containing the tri-  
chloromethyl or the dichlorallyl group are interesting from  
the point of view of the chemical behavior of these groups,  
the authors studied the possibility of a synthesis of such  
compounds and several of their transformations. While it  
was possible to describe organic mercury compounds contain-  
ing the trifluoromethyl or the triiodomethyl group, synthesis  
tests of trichloromethyl compounds were frustrated by the de-  
carboxylase of mercury trichloracetate or by the photochemical  
reaction of tetrachloride with mercury. Hitherto no represen-  
tative of the organic mercury compounds containing  $\omega, \omega$ -di-  
haloidallyl has been described. The authors investigated the

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